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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application

QINGYU ZENG ET AL.

Ser. No. 09/474,536

Examiner: Torres Velazquez, N.

Filed: December 29, 1999

Group Art Unit: 1771

For: ACOUSTICAL FIBROUS INSULATION  
PRODUCT FOR USE IN A VEHICLE

RESPONSE

Commissioner of Patents  
and Trademarks  
Washington, DC 20231

Sir:

In response to the Office Action of October 2, 2002, the Applicants traverse the rejection of the claims without amendment.

Present claims 1-9, 11, 15-18 and 20 all very clearly patentably distinguish over a combination of U.S. Patent 4,946,738 to Chenoweth et al. and U.S. Patent 5,773,375 to Swan et al. This rejection is improper and should be withdrawn since the Examiner has failed to adequately address the issue of motivation to combine these references.

More specifically, it is well established precedent that the prior art must suggest the desirability of the modification or combination of references proposed by the

Examiner in order to support a rejection for obviousness. (See, for example, *In Re Gordon*, 21 USPQ 1125, 1127 (Fed. Cir. 1984) and *In re Laskowski*, 10 USPQ2d 1397 (Fed. Cir. 1989)).

In the Chenoweth et al. patent, the Applicants describe in great detail the production of a non-woven fibrous product and emphasize the improved product strength, stiffness and shape retentivity of the resulting product (note, for example, column 8 lines 11-38). This is in accordance with the specific objectives of the Chenoweth et al. patent as set forth at column 3 lines 49-56 and 61-66 to provide a product with "sufficient strength to the matrix to permit handling and further processing" and "good strength and rigidity which facilitates modular assembly of automotive headliners and similar products."

Chenoweth et al. then explicitly teaches at column 6 lines 8-13 "[t]he thermosetting resin 24 functions as a second or final stage heat activatable adhesive to bond the fibers 12 and 14 and the cores 18 of the fibers 16 together at their points of contact, thereby providing the desired degree of rigidity and structural integrity." At column 6, lines 14-17, it is stated, "[t]he quantity of thermosetting resin 24 in the blanket 10 directly affects the maximum obtainable rigidity; the more thermosetting resin 24 utilized, the more rigid the final product and vice versa." Thus, the Chenoweth et al. patent explicitly teaches that the desired rigidity of the product is provided by thermosetting resin. The Chenoweth et al. patent does not include nor does it in any way suggest including any form of perimeter flange to increase structural rigidity or for any other purpose. Further, with sufficient rigidity being

provided by the thermosetting resin content of the material, one would not seek to add further rigidity to the material by providing a perimeter flange or using any other means.

The secondary reference to Swan et al. relates to a web of melt-blown polypropylene rather than a web or blanket of primary fibers and bi-component polymer binder fibers as set forth and claimed in claim 1 of the present patent application. While it is true the Swan et al. product does include reduced thickness areas 17, it is explicitly stated that these are provided to "promote the integrity of the laminate 10 in those areas and permit the laminate 10 to be easily handled by vehicle manufacturers during assembly operations." In other words, the reduced thickness areas 17 are provided to prevent tearing and delamination of the product. They do not provide any type of significant rigidity to the product disclosed nor would one skilled in the art expect a melt-blown polypropylene product as taught in the Swan et al. patent to exhibit significant structural rigidity.

Based upon the explicit teachings of the primary reference to Chenoweth et al., if one skilled in the art wishes to add structural rigidity to a non-woven fibrous product one incorporates a thermosetting resin in the product. There is no suggestion, teaching or motivation for one skilled in the art to add structural rigidity through any other means much less incorporation of a densified perimeter flange as set forth and claimed in claim 1 of the present application.

In contrast, the Swan et al. patent explicitly teaches that you can provide an

acoustical insulator of melt-blow polypropylene fibers with reduced thickness areas to prevent delamination and tearing of the product. Obviously, delamination and tearing is not a concern in the product of the Chenoweth et al. patent which incorporates significant levels of thermosetting resin which bind the product rigidly together.

Consequently, the proposed combination serves no suggested or useful purpose. Thus, when one skilled in the art reviews the teachings of the Chenoweth et al. and Swan et al. patents, there is no motivation in the references to make the combination proposed by the Examiner: that is, the structure claimed in claim 1 of the present application. In fact, the only basis for the proposed combination of references made by the Examiner is found in the teachings of the present application and it is improper to utilize hindsight and "that which the inventor taught against its teacher" (see *W.L. Gore v. Garlock, Inc.* 220 USPQ 303, 312-313 (Fed. Cir. 1983). Accordingly, the rejection of claim 1 is clearly improper and claim 1 should be allowed.

Claims 2-9 and 11 which depend from claim 1 and are rejected on the same grounds are equally allowable for the same reasons. Further, these claims provide additional limitations to provide still further support for their allowability. For example, claim 4 explicitly provides that the flange has a thickness of less than about 15% of the thickness of the blanket. No specific structure of this nature is in any way taught or suggested in either of the prior art references

Claim 5 provides that the facing material of the product of claim 1 is water resistant. As explicitly acknowledged by the Examiner, the Chenoweth et al. patent does not teach this concept. Further, the secondary reference to Swan et al. only

teaches the concept of providing a barrier layer of thermoplastic film on an insulation web of melt-blown microfiber polymer and in no way teaches or suggests that such a barrier layer of water resistant facing material can be provided on a blanket of fibers as set forth in claim 1 of the present application.

Additionally, claim 11 explicitly provides that the primary fibers of the blanket are polyethylene terephthalate fibers and that the bi-component binder fibers include a core of polyethylene terephthalate and a sheath of polyethylene terephthalate. None of the cited references whether considered singularly or in combination teach or suggest such a structure. In fact, the Chenoweth et al. patent makes no mention of polyethylene terephthalate. Accordingly, there is no basis whatsoever for the rejection of claim 11 which should be formally allowed.

Independent claim 15 also clearly patentably distinguishes over the Chenoweth et al. and Swan et al. references. Claim 15 reads on an acoustical insulation product for a vehicle comprising a blanket of polymer fibers and a water resistant facing material wherein the blanket of polymer fibers includes primary fibers and bi-component polymer binder fibers that are made of a principal polymer component and a binder polymer component.

The Chenoweth et al. patent does not disclose any form of facing material that is water resistant. Further, while the Swan et al. patent discloses an acoustical insulation laminate with a water shield or barrier of thermoplastic film, the Swan et al. reference only teaches providing such a film on a web of microfibers and specially thermally stabilized melt-blown polypropylene microfibers. Thus, there is no teaching

or suggestion in the secondary reference to Swan et al. to lead one skilled in the art to conclude that a water resistant facing material may be laminated to a blanket of the type set forth and claimed in claim 15. Accordingly, claim 15 and claims 16-18 and 20 which depend from claim 15 clearly patentably distinguish over this prior art.

In fact, claim 20 provides that the primary fibers are polyethylene terephthalate fibers and the bi-component fibers include a core and sheath of polyethylene terephthalate. Neither of the cited references teaches or suggests any form of blanket material including primary fibers and bi-component fibers all made from polyethylene terephthalate. Since neither of the cited references teaches or suggests this feature of the claimed blanket material individually, they certainly cannot possibly teach or suggest this feature and, therefore, the claimed blanket material, when combined to formulate a rejection. As such, claim 20 very clearly patentably distinguishes over the cited art and should be allowed.

It is also noted that present claims 1 and 2 clearly patentably distinguish over U.S. Patent 5,459,291 to Haines et al. when considered in combination with the Swan et al. patent. In the Office Action the Examiner states that the Applicants did not previously address this rejection but, in point of fact, this is the first time the Examiner has made this rejection. Specifically, it is noted that present claim 1 represents a combination of original claims 1 and 10. Original claim 10 was never rejected based upon the Haines et al. and Swan et al. patents and, accordingly, there was no rejection of present claim 1 on the basis of this prior art until that rejection was raised in the October 2, 2002 Office Action.

In any event, claim 1 very clearly patentably distinguishes over this proposed combination of references. The Haines et al. patent discloses an insulator that, like the Chenoweth et al. patent cited above, fails to disclose a perimeter flange. This failure of the primary reference to Haines et al. was explicitly acknowledged by the Examiner.

In addition it should be noted that claim 1 of the present application refers to a blanket of polymer fibers including primary fibers and bi-component polymer binder fibers that are made of a principal polymer component and a binder polymer component. The binder component has a softening point lower than the softening point of the principal component and the binder component has been heated to a temperature that is insufficient to soften the principal component but sufficient to soften the binder component to bond the multi-component polymer binder fibers and the primary fibers to themselves and to each other. The Haines et al. patent makes no mention whatsoever of bi-component fibers. Accordingly, the primary reference to Haines et al. suffers two significant shortcomings when utilized to support a rejection of present claim 1.

The Examiner attempts to address these shortcomings by combining the Haines et al. patent with the Swan et al. patent. As noted above, the Swan et al. patent does disclose an acoustical insulation product with reduced thickness areas. Swan et al., however, teaches that these areas are provided to promote the integrity of the product and prevent tearing and delamination. There is absolutely no teaching whatsoever in Swan et al. to provide reduced thickness areas to increase the structural rigidity of a

product as in the present invention.

Further, while the Swan et al. patent does refer to the utilization of bi-component binder fibers, it only does so in the context of their use in conjunction with melt-blown polypropylene microfibers and does not suggest their use in a combination of fibers as set forth and claimed in claim 1 of the present application. Accordingly, it is clear that the references cited by the Examiner do not provide the requisite motivation to lead one skilled in the art to combine the references in the manner suggested by the Examiner. Accordingly, the rejection of claim 1 as well as claim 2 from which it depends based upon a combination of the Haines et al. and Swan et al. references is improper and should be withdrawn. Accordingly, claims 1 and 2 also patentably distinguish over this art and should be formally allowed.

In summary, all the claims presently pending in this patent application patentably distinguish over the prior art and should be formally allowed. Upon careful review and consideration of this response it is believed the Examiner will agree with this proposition. Accordingly, the early issuance of a formal Notice of Allowance is earnestly solicited.



A one-month extension of time for responding to the Office Action is submitted with this response. If any fees are required pertaining to this response, Applicant requests that they be charged to Deposit Account No. 50-0568.

Respectfully submitted,

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